

*REMARKS*

The Office Action dated September 16, 2008 has been carefully considered and is appreciated. For the reasons discussed below in more detail, the Applicants respectfully traverse the rejections, and it is believed that this application is in condition for allowance. Accordingly, favorable reconsideration of the pending application is respectfully requested in view of the foregoing amendments and the following remarks.

*Status of the Application*

Claims 1-7, 9, 13-18, 21-27, 29, 32-37, 41, 44 are currently pending, with claims 1, 13, 21, 33, 41 and 44 being amended. As the subject matter of the amended claims is fully supported by the application as filed, no new matter has been introduced into the Application by way of these amendments. Claims 14 and 34 are canceled without prejudice.

*Summary of the Office Action*

Claims 1, 2, 4, 5 and 13-17 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,044,150 to Rigstad et al. (hereinafter "Rigstad") in view of a publication entitled "On the Problem of Specifying the Number of Floors for a Voice-Only Conference on Packet Networks" by Prasad et al. (hereinafter "Prasad") and in further view of U.S. Publication No. 2003/0235184 to Dorenbosch et al. (hereinafter "Dorenbosch"). Claims 7, 9, and 18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch and Prasad and in further view of U.S. Patent No. 6,912,401 to Rosen et al. (hereinafter "Rosen"). Claim 6 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch and Prasad and in further view of U.S. Publication No. 2003/0018472 to Hershkovits et al. (hereinafter "Hershkovits"). Claims 21, 24, 33-35, 40, and 41 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and in further view of Prasad. Claim 23 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and Prasad and in further view of U.S. Patent No. 6,999,783 to Toyryla (hereinafter "Toyryla"). Claim 25 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and Prasad and further in view of Hershkovits. Claims 26, 27, 29, 36, and 37 are rejected under 35 U.S.C. 103 (a) as being unpatentable over

Dorenbosch in view of Rigstad and Prasad and further in view of Rosen. Claim 44 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch and in further view of Prasad.

### Discussion

The subject matter of the present Application pertains generally to a system and method for talker arbitration based, in part, on prospective and/or current talker speech energy levels so as to remove the need for a user to push a separate button before commencement of speech, which facilitates natural dynamics associated with face-to-face conversations

### INDEPENDENT CLAIMS 1, 21, 44

Independent claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rigstad in view of Prasad and in further view of Dorenbosch. Claim 1 is generally directed to a method of talker arbitration in a half-duplex cellular communication system, where the floor control is granted to a given talker by taking into account the talker's speech energy level weighted by the talker's dynamic priority level that is based on the number of times the talker has been granted floor control. As amended, claim 1 further specifies that the dynamic priority level for each talker is "inversely proportional to a number of times *said talker* has been granted floor control." See Application, page 8.

The Office Action relies on a "round robin algorithm" of Dorenbosch for the alleged teaching of the dynamic priority levels of the application. However, as is evident in paragraph [0049] of Dorenbosch cited in the Office Action, the round robin algorithm of Dorenbosch requires a *comparison* of relative numbers of successful floor control attempts between all participants in the communication session (since the floor control is granted to the participant with the "fewest" number of grants relative to other participants). See Dorenbosch, par. [0049].

By contrast, in the present application, the dynamic priority level for each talker does not depend on the number of successful floor control attempts by *other* talkers since, unlike in Dorenbosch, it is not determined by a comparison of the number of successful floor control attempts for the current talker relative to other talkers. See Application, page 8 (stating that the

dynamic priority for each participant is “based on the number of times that *the PoC participant* has been granted floor control.”) (emphasis added). As reflected in amended claim 1, the dynamic priority level of the present application is inversely proportional to a number of times “*said talker*” has been granted floor control. In other words, the dynamic priority level **independently decreases for each talker with an increase in the number of successful floor control attempts by the very same talker** (irrespective of the history of successful floor control attempts by other talkers and any comparison in the relative numbers of successful attempts as in Dorenbosch). Therefore, Dorenbosch does not teach or suggest that the “dynamic priority level for each talker is inversely proportional to a number of times said talker has been granted floor control.”

The Office Action further relies on Prasad for weighting the speech energy levels by corresponding dynamic priority levels. Office Action, page 5. However, a further analysis of Prasad reveals that the cited “alphas” ( $\alpha_1$ ,  $\alpha_2$ , and  $\alpha_3$ ) in equation number 5 of Prasad represent *predetermined fixed coefficients*, each ranging from 0 to 1 and with their sum equal to 1. Prasad, page 25, equation 5. Prasad requires a fixed choice of the alpha coefficients because “[b]y appropriate *choice* of window lengths,  $\alpha_1$ ,  $\alpha_2$ ,  $\alpha_3$  and  $\theta$ ,  $\lambda$  can be tuned to smoothly provide or withdraw floor access.” *Id.*, page 25, left column, second to last paragraph (emphasis added). Furthermore, these alpha coefficients are used in calculating a “Loudness Number”  $\lambda$ , which is “a function of the *amplitude* of the present and past audio stream.” *Id.*, page 25, left column, second fourth full paragraph (emphasis added). Cited equation 5 further includes activity indicators L1, L2, and L3, which represent a “moving average of packet amplitude.” *Id.*, page 25, left column, fifth paragraph. Thus, the “Loudness Number”  $\lambda$  in equation 5 of Prasad includes fixed coefficients  $\alpha_1$ ,  $\alpha_2$ ,  $\alpha_3$  and packet amplitude windows L1 – L3 and is therefore purely a function of speech amplitude. Hence, Prasad does not teach or suggest weighting of speech energy levels by corresponding dynamic priority levels, as recited by claim 1.

Rigstad relies solely on speech/voice energy monitoring for making half-duplex switching decisions and does not use priority levels for floor control. Therefore, Rigstad likewise fails to cure the aforementioned deficiencies of Dorenbosch and Prasad.

Independent claims 21 and 44 are also rejected as being unpatentable over a combination of Rigstad, Prasad, and Dorenbosch. Claims 21 and 44 both recite “dynamic priority level ... is

inversely proportional to a number of times said talker has been granted floor control” and, therefore, should be patentable for at least the same reasons as independent claim 1.

#### DEPENDENT CLAIMS 13, 33, 41

Dependent claims 13, 33, and 41 incorporate all of the requirements of their respective independent claims 1 and 21 and, therefore, are also patentable for at least the same reasons.

Additionally, as amended, dependent claims 13, 33, and 41 include preventing a prospective talker from obtaining floor control if the number of times the prospective talker has been granted floor control exceeds a **“predetermined” threshold “determined outside of the ... communication session and set at a server.”** See Application, pages 7-8; Figure 3, step 320.

As in the prior Office Action, the current Office Action relies on the “round robin” algorithm discussed in paragraph [0049] of Dorenbosch for both a fixed “threshold” of claims 13, 33, 41 and the “dynamic priority level” of claims 1, 21, and 44. However, the “round robin” algorithm of Dorenbosch requires a relative comparison of the number of times a given talker has been granted floor control with respect to the other talkers during the communication session, while a “threshold” of claims 13, 33, and 41 is a *fixed predetermined cutoff*, set at a server and determined outside of the communication session. The fixed threshold of claims 13, 33, and 41 represents a maximum number of times a participant can be granted floor control irrespective of the number of floor control grants relative to the *other* talkers. See Application, page 7. Therefore, Dorenbosch does not teach, expressly or inherently, preventing a prospective talker from obtaining floor control if the number of times the prospective talker has been granted floor control exceeds a “predetermined threshold ... determined outside of the communication session and set at a server.”

#### DEPENDENT CLAIMS 2-7, 9, 15-18, 22-27, 29, 32, and 35-37

Dependent claims 2-7, 9, 15-18, 22-27, 29, 32, and 35-37 incorporate all of the requirements of their respective independent claims 1 and 21 and, therefore, are also patentable for at least the same reasons.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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